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AUTHOR Evertson, Carolyn M.; And Others
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ABSTRACT

Self reports of classroom behavior given by second- and third-grade teachers in questionnaires are compared to process measures of the same behaviors collected by classroom observers visiting in these teachers' classrooms. The comparisons reveal a generalized pattern of poor accuracy on the part of the teachers, although there were some exceptions for certain variables. In general, accuracy seemed to be much more related to the degree to which the teacher behavior in question is stressed in teacher education programs than it was related to the degree to which a teacher was successful in producing student learning gains. That is, highly successful teachers were not much more accurate in reporting their classroom behavior than were less successful teachers. (Author)

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The main objective of the CORRELATES OF EFFECTIVE TEACHING PROJECT is to expand the number of teaching principles based on documented findings from systematic classroom research. The problems and processes studied have been selected on the basis of observation and consultation with teachers and school personnel. Emphasis is on the study of the classroom to discover how these processes can be conducted to the greatest advantage of teachers and individual students.

One of the project's major efforts was a two-year study of teaching effectiveness involving the examination of the classroom behavior of teachers consistent in producing student learning gains.

Since 1974 three other major data collection efforts were initiated and completed.

(1) STUDENT ATTRIBUTE STUDY which looked at student characteristics and behaviors and their effects on teachers.

(2) FIRST GRADE READING GROUP STUDY, an experimental study designed to test the effectiveness of selected group management techniques in teaching reading.

(3) JUNIOR HIGH SCHOOL STUDY, a follow up on earlier work from the second and third grades of the influence of teacher characteristics and behavior on students' cognitive and affective gains.

Texas Teacher Effectiveness Project: An Investigation of Selected Presage-Process Relationships

Carolyn M. Evertson,

Jere E. Brophy,

and

W. John Crawford

Report No. 75-16

The University of Texas at Austin

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Abstract

Self reports of classroom behavior given by second and third grade teachers in questionnaires are compared to process measures of the same behaviors collected by classroom observers visiting in these teachers' classrooms. The comparisons reveal a generalized pattern of poor accuracy on the part of the teachers, although there were some exceptions for certain variables. In general, accuracy seemed to be much more related to the degree to which the teacher behavior in question is stressed in teacher education programs than it was related to the degree to which a teacher was successful in producing student learning gains. That is, highly successful teachers were not much more accurate in reporting their classroom behavior than were less successful teachers.

Texas Teacher Effectiveness Project: An Investigation of Selected Presage-Process Relationships

This paper is a report of relationships between two subsets of data collected in the Texas Teacher Effectiveness Project from a selected sample of teachers in the second year of a two-year correlational study of teaching effectiveness. This project has been a naturalistic investigation of the presage and process correlates of the relative success of second and third grade teachers in producing student learning gains on standardized achievement tests. Thirty-one second and third grade teachers were chosen for the study because of their consistency in producing student learning gains on the Metropolitan Achievement Tests over three consecutive years prior to the first year of the study. The teachers ranged in effectiveness from consistently high to consistently low. In the second year, 19 teachers agreed to participate again, and nine others were selected, using a fourth year of gain scores, making a total of 28 teachers in all. The study included classroom observations yielding behavioral data on classroom process variables as well as questionnaire and interview data. A summary of the two-year study and discussion of high and low inference process-product linear relationships are reported in Brophy and Evertson (Note 1). The second year report of the non-linear process-product relationships, along with a full discussion of the study as a whole, is found in Brophy and Evertson (Note 2). The details of the teacher selection procedures are reported in Brophy (1973)

and Veldman and Brophy (1974). Interested readers may wish to obtain these reports also.

The focus of the present paper is twofold:

1.) To what degree are teacher self report (presage) data on classroom philosophies and behaviors accurate and valid statements of their actual classroom behavior as revealed by classroom observation (process) data?

2.) What relationships (if any) exist between teacher's accuracy in reporting classroom behavior and their success in producing student learning gains?

Data Collection Instruments

This report deals specifically with relationships between selected presage and process variables designed to measure the same behaviors. Presage measures include variables difficult to measure through periodic classroom observations or coder ratings, such as teachers' attitudes regarding teaching methods, motivation techniques, beliefs about tests, and parental involvement. The questionnaire items, some of which are used in this report, were completed by thirty teachers at the end of the second year: twenty-eight (the second year sample) plus two teachers from the first year who had retired but agreed to be interviewed and to fill out the questionnaire.

The questionnaire contained checklists, scales, and percentage estimates, to which teachers responded by checking, circling, or filling in a number.

items dealt with such topics as proportion of time spent in lecturing vs. class discussion vs. individual seatwork; time spent in lesson preparation; proportion of objective vs. subjective impressions used in grading; types of motivating devices used; and factors felt to be essential to good teaching. The questionnaire also included scales on which teachers could rate their teaching concerns, sources of teaching satisfactions, and beliefs about good teaching.

The questionnaire data discussed in this paper are self-report data, and as such are open to sources of response bias such as extreme response sets, social desirability, logical error, and the like. Thus, all of these data concern teachers' stated opinions or perceptions. The degree to which their responses reflect their actual behavior or even necessarily their actual perceptions and beliefs is the subject of this report.

Process measures included both low inference and high inference measures for assessing teacher behavior. The low inference measurement system was an expansion and adaptation of the Brophy-Good Dyadic Interaction Observation System (Brophy and Good, 1970), which is designed to record each interaction that the teacher shares with a single individual child (as opposed to lecturing or other teacher behavior that is directed at the entire class or at a group). This instrument was selected because it subsumes a wide range of variables, including most of those stressed by the observational systems that have been used most frequently in previous educational research, as well as some unique to this system. The major adaptations and expansions were done to add variables based on Kounin's (1970) research on classroom management techniques, and to break down teacher behavior more finely according to

context variables having to do with the time and nature of classroom interaction during which a particular observation took place. The variables will be described more fully in the results section when the presage-process data from this low inference instrument are presented. The coding manual is included in Brophy and Evertson (1973). (See also Brophy and Evertson, Note 3). Teachers were observed with this instrument four times the first year and 14 times the second year. The first year, since the observation system was new and the observers were newly trained, observers worked in pairs and their scores were averaged. Since observer agreement was generally quite high, in the second year observers worked in pairs until they reached an 80% reliability criterion (procedures are specified in Brophy and Good, 1970, for training observers and assessing reliability), and then worked singly. Teachers were observed only four times during the first year of the study due to financial constraints; obviously, considerations of the reliability of teacher behavior from one observational visit to the next dictate that the teachers be observed as many times as possible in order to obtain a reliable and valid index of their typical classroom behavior. This was approached much more closely in the second year of the study, in which we were able to observe teachers 14 times each.

Here, each teacher was observed by two coders who alternated visits to the classroom. Pairs of coders were assigned to a given teacher so that reliability data on high inference ratings and other measures could be obtained. A variety of high inference measures of teacher behavior were used. One was a set of 12 classroom observation scales based on factor analytic studies of five of the more heavily used observation systems in existence (Emmer and

Peck, 1973). These were five-point scales that were rated several times on each classroom visit by the observer, and then averaged to obtain a score for each teacher. The variables were among those most heavily stressed by Flanders, Medley, Smith, and other major figures in the development and application of classroom observation systems. Other high inference instruments included rating scales and checklists geared to get at aspects of teaching which are observable in repeated exposures to the teacher but which are difficult to measure reliably or validly through low inference observations of specific, concrete interactions. These include such variables as teacher warmth, democratic vs. authoritarian leadership style, child orientation, credibility with students, and the like. Variables such as these are easy to rate reliably by raters familiar with teachers, there is reason to believe that this measurement method is preferable to low inference coding when the variable is not amenable to coding of frequent discrete units of behavior (Rosenshine and Furst, 1973)

One instrument was used in a low inference manner the first year but in a high inference manner the second year. This was an instrument designed to measure aspects of teachers' lesson presentation, particularly the amounts of time (if any) devoted to various activities that teachers sometimes include in lessons. The first year, these data were collected from a subsample of 10 of the teachers (5 high effective and 5 low effective) who were observed twice while they taught lessons. The data were collected with a low inference system which involved actual timing of the different aspects of the lessons observed. During the second year, this low inference method was abandoned because it required separate visits to the classroom (it was not possible for coders to code with this method

and code with the other low inference system at the same time, so that rather than get only seven observations with each system, we decided to get 14 observations with the larger system and get the other information through high inference ratings). Consequently, in the second year, all 28 teachers involved in the study were measured on these aspects of lesson presentation, but they were measured through high inference estimates of the average amount of time that they typically spent in various activities during structured lesson times.

In this report, we will assess the validity of the self-report data by comparing teacher responses to questionnaire items with data on teacher behavior from our high inference and especially our low inference classroom coding. We feel that such comparisons are of interest, since many reseachers rely on presage measures such as teacher beliefs, attitudes, age, education, etc., in an effort to uncover attributes of effective teachers. Much reliance on these measures of teacher attitudes, practices, and beliefs stems from the fact that these data are inexpensive and relatively easy to obtain compared to process measures such as classroom observational measures. We feel it is important to examine the degree to which teachers' professed attitudes and beliefs match their observed behavior.

Data Analysis

Several presage variables from our questionnaire data were selected and correlated with corresponding process measures taken from coder ratings of teacher behavior made during and after classes and from the observational coding system.

Insert Table 1 about here

The r's, N's, and probabilities are reported for each presage measure and its corresponding process measure (or measures, in cases where more than one process measure is appropriate). In addition to the linear correlations, the mean frequencies for presage variables as reported by the teachers are noted in the column on the extreme left (frequency reported). The means for the frequency that the behavior was observed or recorded by coders are shown in the column to the right (frequency observed).

Two main issues will be dealt with. The first is an examination of the presage-process relationships themselves and discussion of the correlations between reported and observed behavior (reflecting the degree of relative teacher accuracy between professed attitudes and beliefs and behavior, regardless of effectiveness or relationships to student learning gains). The second issue involves the question of whether teacher accuracy is related to producing student learning gains.

In order to investigate this question, the sample of 28 teachers was divided in half (high vs. low effective), and scores for each of the two groups were correlated in the same way as for the total group. These correlations appear under the total group correlations, those for high effective teachers on the right and those for low effective teachers on the left. Part I of this report will discuss the top set of r's reflecting relative accuracy for the entire sample of teachers. The r's in the lower pairs, which give information about the relative accuracy of high effective vs. low effective teachers, will be discussed in Part II.

Probability data are included in the table for the correlations to be discussed. In addition to these correlations, which reflect teachers' relative accuracy in self report, the table contains information about the absolute frequencies of behavior observed in the classroom and recorded in process measures.

The presage variables are listed on the lefthand side of the table, and all process variables which related to the presage variables are listed on the extreme righthand side of the table. The column of mean reported frequencies show the average percentages that the teachers reported the particular practice, belief, or attitude. Adjacent to this column are the mean observed frequencies that the given process behaviors were observed by coders.

Statistical tests of differences between the means in these columns cannot be made, because the self report data are from teachers' responses to five-point scales and to percentage estimation items in the questionnaire, while the process data are means and percentage scores from the classroom observations. Consequently, attempts to test the statistical significance of differences in these scores would be meaningless. However, it is possible to get a general idea of the degree of correspondence between the frequency with which teachers reported a behavior and the frequency that the same behavior was observed in the classroom by comparing these scores. Sometimes the differences are extreme, indicating severe overestimation or underestimation on the part of the teachers.

The data to be presented concern teacher accuracy in reporting their classroom behavior. Accuracy is a relative term, of course, so that we have

not attempted to define it formally. However, for purposes of communication, relative accuracy as expressed by correlation coefficients will be equated with statistically significant correlations ($p < .10$). Absolute accuracy, as reflected by the match between the teacher self report scores and the scores from the presage data, will be interpreted as a rough equivalence between these two data sets. The precise data are given in the table, however, for readers who wish to form their own conclusions about teacher accuracy.

In order to facilitate understanding and discussion, the variables are grouped in the following sections: lesson presentation practices, reading instruction, beliefs about good teaching, classroom organization and management, goals and values regarding student-teacher relationships, and incentives and motivation. Each of these sections will be taken up and discussed in order.

Part I

Lesson Presentation Practices

In general, this group of variables failed to show presage-process correlations. Most relationships are near zero or even negative. Teachers were accurate in predicting the amount of time that students were allowed to choose their own assignments instead of making one assignment for all students (i.e., the correlation for this variable was positive and significant). One other relationship which had significant positive correlations was the percentage of time teachers reported spending in lectures and demonstrations compared with the actual rated amount of lecture time.

Teachers also were able to estimate the amount of time spent in lectures and demonstrations accurately, and this corresponds with the averages reported by the coders for time spent this way. Many other variables were examined in this set, but all except these few failed to show significant correlations between presage variables and their matching process variables.

It is interesting to examine the degree to which teachers reported a given behavior relative to how often this same behavior was noted by classroom observers. Teachers greatly overestimated the degree to which they performed the behavior on a number of variables: summarizing lesson content; reviewing the previous day's lesson; presenting new material; giving directions for seatwork follow up; and letting the students practice the new material. All were methods of lesson presentation which teachers reported doing to a large degree. However, coders' ratings of these same lesson presentation practices show that all were seriously overestimated. The average teacher did not spend as much time in any of these particular pursuits as she reported.

In a few cases, teachers underestimated how much they used different methods. Teachers reported striving for an average correct answer rate of 64%, where in actuality the percentage of student correct answers was 77%. Another notable underestimate was the percentage of time spent teaching to groups. Coders reported 89%, but the teachers estimated only 45%.

Neither of the two presage-process relationships for reading group instruction were significantly related. However, the teachers' reports of ideal rates of correct answers matched closely with the average percentage of correct answers their students gave (75% and 78%). Teacher estimates of time spent in silent reading in reading groups were not so accurate, however. They estimated 68%, but coders' estimates averaged only 30%.

Beliefs About Good Teaching

No significant relationships occurred for the first five variables in this set. However, teachers' beliefs that they should be the authority in knowledge and discipline showed a negative relationship with coders' ratings of the degree of democratic leadership style, as would be expected if the teachers put their professed beliefs into practice (as the apparently did).

The belief that it is a waste of time to let students discuss school subjects among themselves was positively related to the amount of pupil-to-pupil interaction in the room. Contrary to expectations, the stronger the belief that this is a waste of time, the more observed pupil-to-pupil interaction (Percentage of pupil-to-pupil interaction is a rating based on the amount of student-to-student talk which is subject matter related.). This puzzling relationship might be explained by the fact that often it is difficult for coders to hear, and hence to decide whether the interactions among students are subject-matter related or not. Perhaps large amounts of rated pupil-to-pupil interaction could be indicative of problems with classroom control for some teachers, rather than gross inaccuracy concerning their policies here.

The next significant relationship for this set is the belief that teachers should teach the whole class rather than to individuals. It seemed appropriate to compare this with process measures dealing with the aspects of individualizing instruction, expecting negative relationships if teachers' actions matched their attitudes. Most of the relationships with process measures did show negative relationships, with one significant one (the percentage of teacher-student private contacts). Teachers appear to be somewhat accurate in predicting their behavior in this context.

The feeling that good attention should be kept by the teachers' being interesting instead of their having to ask for it was negatively related to rated level of attention in the classroom. That is, the stronger the belief that one should not have to ask for attention, the lower the rated attention level. This may be an overly idealistic belief for teachers of younger children. It also is noteworthy that the negative relationship was produced largely by low effective teachers. This will be discussed in more detail in Part II of this report.

Finally, although teachers expressed the belief that problem solving is one of the main purposes of school, this showed a negative relationship with time spent in problem solving activities. The higher they rated its importance, the less they did it! For this and the preceding measure, we suspect that social desirability played a significant role in the teachers' reporting of their beliefs.

Thus, teachers were not very accurate (in the relative sense) concerning the variables in this set. However, they were accurate in the absolute sense for most of their beliefs and reported practices for this group of variables. There were some exceptions: overestimates occurred for amount of time in review; use of peer tutoring; feeling that active discussion was worthwhile; belief that individual instruction was a sign of good teaching; orally evaluting students' work; and belief in the importance of problem solving. In a few places, teachers underestimated: their rated concern about academic achievement was much higher than their expressed belief that non-achievers should be failed. While these teachers were seen by coders as being concerned about achievement, the teachers apparently did not carry

this to the point of feeling that non-achievers should be failed. No doubt, teachers felt that the issue of achievement and failure was more complex than this.

Classroom Organization and Management

No significant relationships appeared for the classroom management variables. Concern about maintaining classroom control was negatively, though not significantly, related to ratings of student respect, classroom order, efficient transitions, student compliance, and well-established routines. Fuller (1969) reported that teachers were concerned about adequacy in a particular area to the degree that they felt their adequacy was in doubt or was a problem for them. Thus, negative correlations between level of concern and aspects of good classroom management might be expected in this case.

Teachers predicted accurately on an absolute basis, except for considerable overestimation of the degree to which they discouraged students from moving around the room freely. They did not require permissions to leave seats. Nor were children allowed up only one at a time. It is not obvious just what methods were used for regulating physical movement, if any; however, coders saw less evidence of tight restrictions on freedom of movement than teachers reported.

Goals and Values Regarding Student and Teacher Relationships

No significant relationships appeared between reported teacher attitudes about relationships with their students and coder ratings of the teachers' behavior. Most correlations were negative, though not significant.

While all teachers reported warmth and enthusiasm as important, coder ratings of teacher warmth and enthusiasm were low. Again, it appears that social desirability may have entered into many of the teacher responses. While many may have genuinely felt these were important, their classroom behavior did not always reflect their stated beliefs.

Teachers showing less concern about how students felt about them got higher ratings on student respect and solidarity with the class. Again, this fits with the teacher concerns model of Fuller (1969).

Incentives and Motivation

Teachers' reported attitudes and beliefs matched their process behavior slightly more often for the group of variables involving praise and rewards than for data in the other contexts. Beliefs in publicly praising a child as motivation to others correlated positively with three praise measures: total praise after response opportunities (both mornings and afternoons), and praise after correct answers. The majority of the rest of the relationships are negative in direction, although not significant.

Using praise as a motivational technique correlated positively with three process measures, two relating to praise of behavior and one relating to praise of relevant student comments in reading groups. However, one significantly negative relationship also appeared for praise of student initiated comments in general class contexts (as opposed to reading groups). It is not apparent why these contradictory relationships appear. Like many of our findings, though, these reinforce Dunkin & Biddle's (1974) call for more attention to context effects in classroom process research. The

remaining correlations between using praise as a motivator and the other process measures of praise are mixed and show no particular patterns.

Teacher ratings of frequent praise being important correlated positively with behavioral praise and with praise of student initiated comments, but this is countered by negative correlations for praise of opinions and of student comments in general class.

The belief that teachers should praise all students' work in some way correlated positively with the corresponding process measures of praise of student comments, praise of opinions, praise of student initiated work contacts, and ratings of generally reinforcing teacher behavior or attitudes. Only one negative relationship appeared, and this was for teacher initiated contacts in which work was praised. Apparently, teachers are accurate to some degree about the relative extent to which they praised. However, the average frequencies (observed) of praising were extremely low. They rated praise as extremely important, but they simply were not observed to praise very much. This was true for all four sets of comparisons of presage ratings of praise by the teachers.

For teachers' reports that praising the work of others does little to stimulate achievement, we had expected negative relationships with the process measures. Teachers who held this attitude tended not to praise publicly. Nearly all the relationships were negative, indicating that the teachers were relatively accurate, and four of these were significant: praise of student initiated comments, and all the measures involving praise for academic work. Teachers endorsed the belief that praising other students' work does little to stimulate achievement only about half as much as they endorsed the four preceding positive statements about praise. Means

for this statement were about 48%, whereas the means ranged from 69-90% for the others.

The final six measures all deal with forms of rewards and recognition which teachers reported using. General presage-process agreement appeared for these comparisons, also. Teachers who reported using competition to motivate also tended to use peer pressure as punishment. They also tended not to have students wait patiently and respectfully when their classmates were called on, but rather to push for chances to respond themselves, a probable by-product of fostering competition. The reported use of individual prizes also was positively related to the teachers' use of symbols such as gold stars, smiling faces, etc. Overall, teachers were quite accurate about the relative degree to which they used any of these methods as rewards. However, they reported using them with a much higher frequency than they were observed using them. Teachers who reported using public recognition as a reward also tended to use waiver of assignments and monitor jobs as rewards. Both of these were likely to be more public than written comments on papers that only the individual child sees. Also, teachers who used exemptions from tests tended to use special privileges such as access to special equipment or permission to go to the library as rewards.

Discussion of what these correspondences, or lack of them, may mean, or how they might be explained, will be reserved until later, after the examination of the second question: the accuracy of predicting by high vs. low effective teachers.

Part II

In Part I, our concern was with the general question of whether consistent teachers as a group were relatively accurate in predicting their observed behavior in the classroom, as represented by presage-process correlations. In Part II, we will look at the question of whether high effective vs. low effective teachers were more aware of, and hence better able to predict, their behavior with relative accuracy. We also will look at the question of which areas, if any, high (vs. low) effective teachers are able to predict best. For ease of communication, we will use the term "accurate" to describe all presage-process correlations for either group which are significantly positive ($p < .10$). We also will use the term "inaccurate" to describe presage-process relationships for either group which were significantly negative.

Lesson Presentation Practices

This whole set reveals little that was not evident in the whole group correlations. Low effective teachers reported summarizing lesson content often, but were rated as spending relatively little time in lesson summary. Low effective teachers were able to predict accurately the amount of time they spent in lectures and demonstrations, however.

High effective teachers were inaccurate in predicting their ideal rates of correct responses in general class discussions. They reported a lower average ideal percentage of correct answers, but they were coded for higher percentages of correct answers.

Teachers all rated highly the belief that it is important to ask frequent questions, but measures of total response opportunities over time suggest that they did not put this belief into practice. Although teachers were observed to ask over twice as many questions in reading groups than in either of the other two general class contexts (AM or PM), their questioning rates did not correspond with their rated belief in the importance of frequent questioning. Social desirability no doubt influenced teachers' responses.

One interesting underestimate involved teachers' reports of the percent of time they spent teaching to groups. Coders' ratings showed that nearly twice the reported amount of time actually was spent teaching in the group situation. Although they were remarkably accurate about the amount of time they spent presenting material, giving lectures and demonstrations, and teaching to individuals, neither group of teachers was accurate about the time they spent with groups.

Possibly, teachers interpreted the question as asking only for formal reading group time, and reported only these percentages (coders recorded time spent in reading groups as well as other informal group teaching that goes on in a school day).

Reading Instruction

Low effective teachers were relatively accurate in estimating their ideal percentages of correct answers, but high effective teachers were not. The higher the reported ideal rate of correct answers, the lower the percentage of correct answers elicited in reading group. This suggests that,

as a group, the high effective teachers held higher expectations for their students' performances in group question and answer situations than the low effective teachers did.

Both groups of teachers, however, greatly overestimated the amount of time their students spent in silent reading. Teachers may have included reading in several contexts in this category, such as reading library books, reading directions for seatwork, etc., while coders included only time spent in silent reading in reading groups.

Beliefs About Good Teaching

Several contradictory relationships appear for this set. High effective teachers were inaccurate in judging the relative amounts of explanation they gave.

The reported belief that it is a waste of time to let kids discuss school subjects among themselves correlated positively with the rated amount of pupil-to-pupil interaction in the classroom for low effective teachers.

Low effective teachers' attitudes toward pupil-to-pupil interaction also did not correspond with the observed amount of subject matter related pupil-to-pupil interaction rated by coders. As suggested earlier, in some classrooms where there were control problems (and this was frequently the case in the classes of low effective teachers), it was difficult for coders to determine whether pupil-to-pupil talk was related to subject matter or whether the students were just visiting or chattering. Low effective teachers could very well feel that discussion among students was a waste of time if: 1) they were not able to keep classroom control; and, 2) they were not

able to use the technique of pupil-to-pupil discussion effectively.

Low effective teachers were able to predict with relative accuracy the amount of time they spent teaching individuals, although neither high nor low effective teachers estimated the absolute amounts of time spent in individual instruction accurately. High effective teachers also were accurate regarding the relative amounts of time they spent in private work contacts with individual students.

The attitude that teachers should keep attention by being interesting rather than having to ask for it was negatively related to coders' ratings of level of attention for low effective teachers. Apparently, this attitude is unduly idealistic for children of this age, whose attention spans are short and who are being socialized toward proper classroom behavior. This suggests that these indirect methods don't work with young children, at least not by themselves.

Even though high effective teachers rated problem solving as one of the main purposes of school, they were not observed spending a great deal of time in this activity. They were inaccurate in predicting the amount of time they spent in problem solving.

The beliefs that: some review every day is good; peer-tutoring is good; active discussion is worthwhile regardless of subject; individual instruction is a sign of good teaching; teachers should not orally evaluate students' work; and problem solving as one of the main purposes of school all were reported by teachers with greater frequency than coders observed in the classroom. These are familiar findings by now.

However, the attitude that non-achievers should be failed was not reported nearly as much as coders' ratings of teacher concern about academic achievement. While most teachers were rated highly on this concern variable, they apparently did not feel that failing non-achievers was the answer.

Classroom Organization and Management

The teacher rating of concern about maintaining classroom control was matched with five process variables which represented aspects of classroom management. As mentioned previously, Fuller's levels of concern model predicts that preservice teachers express concern about those aspects of teaching which they feel are problem areas for them. Although only one significant relationship appeared for the groups in set, the trends suggest that, for low effective teachers, the data support Fuller's theory. However, for high effective teachers, the relationships are in the opposite direction. This suggests that high effective teachers' ratings of areas of concern reflect focus on and coping with these aspects of teaching. The negative relationship that appears for high effective teachers for concern about classroom control and coder ratings of chaotic, unplanned classes also supports this. High effective teachers who reported high concern in this area tended not to have chaotic classrooms. As a group, these relationships suggest that ratings of concern mean different things for high and for low effective teachers.

Teachers estimated the frequencies of most classroom organization and management variables accurately, except for reports of discouraging students

from moving around the room freely. While teachers' average ratings were around 49%, coders did not observe students being required to stay in their seats. While teachers felt that students should be discouraged from moving around the room freely, they apparently did not institute rules regarding this behavior. The other variables in this set showed good correspondence between teacher self reports and coder data.

Goals and Values Regarding Student and Teacher Relationships

The ratings by teachers in this set show evidence of extreme response set and social desirability. On all presage measures except those dealing with concerns, the mean reported frequencies ranged from 81% to 94%, indicating that most teachers were strongly agreeing with these variables. Ratings on the concern measures (concern about how students feel about me; concern about whether students are learning what they should; and concern about the wide range of student achievement) were less obviously scaled for desirable answers. However, enthusiasm, warmth, ability to get student respect, etc. all were rated as highly important.

Only two significant relationships appeared. These were for high effective teachers and on comparisons involving enthusiasm and warmth. However, the correlations appear to have been produced by the few teachers who did not give extreme ratings on the enthusiasm and warmth items. Both groups of teachers rated these two variables as extremely important, but coders' ratings indicated that they were less enthusiastic and less warm toward students than their self reports suggested.

Incentives and Motivation

To avoid confusion, the four presage variables dealing with attitudes toward praise will be discussed as a group. The fifth presage variable, "praising the work of others does little to stimulate achievement," is phrased negatively, so that negative correlations for either group would indicate positive findings for accuracy. We also will include this variable in the discussion of this set.

First, it should be noted that all teachers tended to rate the use of praise as highly important, reflecting, if anything, extreme response tendencies and social desirability. However, coders recorded very low incidence of praise in most contexts. Actual praise rates ranged from about 1% to about 15%, although virtually all teachers rated their use of praise "5" on a 5-point scale. However, the proportion of praise (vs. criticism) was extremely high, (this was a relative percentage; i.e., to the extent that teachers either praised or criticized student work, the overwhelming proportion was praised).

The high effective teachers were accurate for the greatest percentage of the positive findings. Nine out of ten of the significant correlations for high effective teachers reflected positive findings. Thus, high effective teachers were accurate in their estimates of relative praise. On the other hand, six of the eight significant correlations for low effective teachers were in the negative direction. Low effective teachers were inaccurate in their reports of use of praise.

High effective teachers were able to predict their praise of students for academic work, for answers in public response opportunities, and for

relevant student intiated comments in reading groups. By the same token, low effective teachers were inaccurate about the extent that they praised work, answers to opinion questions, and relevant student initiated comments. It should be kept in mind that the means for most of the teacher self report measures of praise are sufficiently high that these correlations no doubt were produced by the few teachers who did not rate praise "extremely important" but just "important."

The remaining presage variables deal with types of rewards and other forms of motivation reported by teachers. The reported use of competition to motivate students was negatively related to coder ratings of students as waiting and listening respectfully while others had their turn. Although relationships were negative for both groups of teachers, this was significant for the low effective ones, suggesting either that competition was used to the detriment of learning gains or that some aspects of poor classroom control may have affected this relationship. Also, while teachers may use competition as motivation, they seldom use peer pressure as punishment (according to coders' ratings).

The only other significant relationship for this data set was a positive correlation of teachers' reports of their use of individual prizes as rewards and coders' ratings of the use of concrete objects (candy, money, etc.) as rewards. In this case, low effective teachers were able to predict more accurately. However, both groups reported using individual prizes, public recognition, exemption from tests, and special privileges to a much greater degree than coders observed them using these methods. High effective teachers were the most serious overestimaters. Low effective teachers

reported a lower percentage of use, but they also were observed using these methods of reward proportionately less than high effective teachers. This fact is not surprising, because use of special privileges and use of symbols were two measures found to correlate with learning gains (Brophy and Evertson, Note 2).

Discussion

There was a general lack of correspondence between the practices teachers reported, the ratings of their beliefs and attitudes, and what they were observed to do in the classroom. However, there was reasonable agreement in some areas for some types of variables. In particular, teachers appeared to be more aware of what they did to provide incentives and motivate students. High effective teachers predicted their rates of praise accurately for nine out of ten significant relationships. Low effective teachers were inaccurate in six out of eight significant measures, however, suggesting that high effective teachers may be more aware of their behavior, at least regarding praise of student work. In general, though high effective teachers were no more accurate than the low effective teachers in predicting their behavior.

There are several possible reasons for the general lack of correspondence: 1) The normal press of the average classroom does not lend itself to reflection. Many teachers are continuously occupied most of the school day, answering questions, helping with materials, keeping order, shifting from one group setting to another, giving group help, checking work, etc. (Jackson, 1968). It is difficult for teachers to keep track of how much time they

spend in different tasks. 2) Few teachers are provided with objective feedback about what they actually do, although investigators have found that provision of feedback can and does alter teacher behaviors (Good and Brophy, 1974). 3) Teacher training programs, both inservice and preservice, apparently do not help teachers to view teaching with the conceptual framework needed to be aware of many important teaching behaviors.

For example, techniques for responding to students who do not know the answer to a question are seldom even discussed, let alone differentiated into: give a student a clue, repeat question, ask a new question, or ask another child. When presented with such distinctions, teachers see that they are common sense categories and that they essentially exhaust the possibilities of things teachers do following this type of response failure. However, they usually do not articulate them in this way spontaneously, nor do they vary them consciously.

4) Social desirability no doubt influenced teacher answers to many of the questions, causing their ratings to be much higher than their observed classroom practices. Many of the presage measures were obvious truisms that most people, not just teachers, would agree with, such as "enthusiasm is important;" "one should be warm toward students;" or "it is important to give clear instructions."

Those types of behaviors which teachers were able to predict accurately involved some aspects of praise, several aspects of the use of concrete or symbolic rewards, and aspects of classroom management. These are frequently discussed topics, behaviors that teachers are taught to be aware of and/or that classroom survival has forced them to be aware of. Praising students

not only is a "good" thing to do, it frequently is emphasized in teacher training courses and books and magazines for teachers. Also, behavior modification techniques emphasize and involve practice of using concrete and symbolic rewards. Hence, these are practices teachers might be expected to be more aware of. Classroom control is the main concern of most beginning teachers. They look for effective methods and strategies to use until they develop a system that works for them. The high effective teachers eventually solve this important problem. Therefore, it is not surprising that teachers might be slightly more aware of their behavior in these areas.

The data relating to Fuller's (1969) concerns model raise interesting theoretical issues. Her model was developed specifically for and about preservice teachers just beginning the profession, and consequently high concerns were equated with difficulty in coping. The present data suggest that the same model holds for relatively ineffective inservice teachers, apparently because they haven't learned to cope successfully. However, highly effective teachers show the opposite pattern. Apparently, they have learned how to achieve their goals. Thus, for these teachers, high concern levels reflect areas of concentrated focus and apparently successful coping, not coping failure. In short, expressions of concern by an inexperienced teacher and/or a teacher who cannot cope successfully reflects genuine concern due to inadequacy, but expressions of concern by experienced and successful teachers apparently indicates high priority areas which are given special attention and handled successfully.

Taken together, these considerations reaffirm that research on teaching is in its infancy, and that a knowledge base does not yet exist for allowing

systematic teacher education (which would lead to systematic teacher behavior with predictable results and with teacher accuracy concerning what they do). Under the circumstances, perhaps it is not so surprising that relationships between teacher success in producing student learning gains and teachers' accuracy about their own behavior were generally poor. Because the content of most books used in teacher education courses is based on commitment to ideas which have been disproved, are overgeneralized, or have few data to back them up (Dunkin and Biddle, 1974), it follows that teachers' accuracy should be related more to what is stressed in such books than to what they really do in the classroom. Many of the things we measured probably never were consciously thought about by these teachers until we asked them.

However, the teachers found the things we were studying to be psychologically meaningful to them, constituting familiar and recognizable aspects of teaching (once we brought them up), even though they usually had not thought about many of them before. This suggests that consciousness-raising about some of these variables would improve teacher accuracy in the future. It also underscores the need for conceptualizing and studying teaching using psychologically meaningful units that accurately reflect what teachers do, particularly what they do in the context of their consciously articulated goals.

It appears that teaching, like parenting, involves much situation specific and predictable behavior which occurs due to conditioning and habit rather than conscious awareness and deliberate intent. However, intervention efforts involving consciousness raising have shown that, when teachers

are made aware of an area of behavior and learn to build specific activities into their repertoire, they become more predictable and more aware of what they are doing. Also, if request for change fit their goals, they change their behavior merely upon request, once they see the problem (Good and Brophy, 1974).

The differences in findings across contexts (small group versus whole class; teacher initiated versus student initiated; work interactions versus behavior interactions versus procedural interactions) underscore the need to take context into account in classroom research (Dunkin and Biddle, 1974). Other data from this project (Brophy and Evertson, Note 1, Note 2) showed many context differences in process-product relationships for the same process variables, indicating that teacher behavior differed by context even though the variable was ostensibly the same.

Perhaps some of the teacher inaccuracy in the present study was due to a teacher tendency to respond to the questions by visualizing just one or a small number of contexts in which the behavior in question was salient for them, so that their responses reflected context-specific behavior rather than more general behavior. This can be seen in places where several process measures from different contexts were available to match against teacher responses to questionnaire items. Frequently, various measures of the same teacher process behavior differed considerably in their correlations with teacher self report, dependent upon contexts. Thus, teacher behavior needs to be conceptualized not only in more meaningful units, but also within more meaningful and smaller contexts, if we are to move towards a more complete understanding of it.

Finally, although it seems redundant to say this yet again, the data implied strongly that self reports cannot be taken at face value. This is not true only of teacher self reports, of course; it is a serious difficulty with self report data of any kind. We expected some social desirability and some uneven patterns of accuracy in the teacher self reports, but we did not expect the rather generalized picture of poor accuracy which appeared in the data, even for the highly effective teachers. We stress again, however, that, in the case of teachers reporting on their own activities in the classroom, at least, we believe that the primary source of inaccuracy is lack of teacher awareness, which in turn results from the lack of a knowledge base for teacher education.

This is in contrast to inaccuracy due to combinations of social desirability effects, response sets, and other problems in self report data that imply that the individuals are systematically distorting what they say in order to look good in the eyes of the investigators. Although undoubtedly there was some of this in the self report data collected from these teachers, the awareness factor seemed to have been much more powerful in reducing teacher accuracy.

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Table 1. Observed Frequencies and Correlations between Selected Presage Variables and Corresponding Process Variables[1]

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	ρ^2	Process Variables
I. Lesson Presentation Practices						
1. Summarize material to be covered	70 68 73	24 24 24	09 -01 17	28 14 14	.66 .97 .57	% of time devoted to summarizing review (R)[3]
2. Summarize lesson content	79 80 77	24 24 24	09 -53** 15	28 14 14	.42 .61	% of time devoted to summarizing review (R)
3. Review previous day's lesson	67 67 67	37 37 36	19 16 22	28 14 14	.34 .59 .46	% of time devoted to review of old material (R)
4. Present new material	76 76 76	48 47 48	14 13 15	28 14 14	.49 .66 .61	% of time devoted to presentation of new material (R)
5. Give directions for seatwork follow-up	85 85 84	42 42 42	-00 -42 27	28 14 14	.99 .11 .36	% of time devoted to giving instructions for follow-up after seatwork (R)
6. Let students practice	83 78 87	42 41 43	26 15 38	28 14 14	.19 .61 .17	% of time devoted to having students practice new material (R)
7. Assign independent seatwork	61 57 65	53 50 56	02 03 -05	28 14 14	.93 .92 .86	% of time devoted to independent activity (R)
8. Use learning centers with audio visual aids	83 81 85	24 25 23	07 12 06	28 14 14	.73 .69 .83	Use learning centers (R)
		41 38 45	15 03 39	28 14 14	.47 .92 .17	Use learning centers with prepared activities for children to work with (listening, visual, science, etc.) (R)

Table I Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
9. Allow students to choose assignments instead of making one assignment for all	66 64 67	52 49 56	39** -02 28	28 14 14	.96 .33	Students allowed choice in assignments (R)
10. High ideal errorless rate in general class discussions	64 68 59	44 55 32	17 04 22	25 12 13	.42 .91 .48	Assignments are too short or too easy (R)
		30 33 28	-12 -48 34	25 12 13	.58 .12 .25	Assignments are too hard (R)
		77 76 78	-19 11 -55**	25 12 13	.38 .73	% correct answers-(AM)
		77 80 74	-02 02 -15	24 12 12	.92 .94 .64	% correct answers-(PM)
11. % of time spent in lectures and demonstrations	31 30 32	32 33 31	33** 30 40	28 14 14	.30 .16	% of time spent in lecture (R)
		39 40 38	24 51* -01	28 14 14	.23 .96	% of direct presentation of material (R)
12. % of presentation of material	46 46 47	39 40 38	18 43 -02	28 14 14	.36 .12 .96	% direct presentation of material (R)
13. % of time teaching to individuals	29 32 26	33 32 34	-26 -09 -42	28 14 14	.19 .75 .14	% of time teaching to individuals (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
14. Believe that it is important to ask frequent questions	70 71 68	16 19 13	22 30 09	28 14 14	.27 .30 .75	Total response opportunities/total time-(AM)
		21 19 23	06 34 -16	27 14 13	.78 .24 .60	Total response opportunities/total time-(PM)
		51 53 49	-05 -01 -08	26 12 14	.79 .98 .79	Total response opportunities/total time-(RG)
15. % of time teaching to groups	45 43 47	89 88 90	02 -07 09	28 14 14	.92 .82 .76	% time teaching to groups (R)
II. Reading Instruction						
16. High ideal errorless rate in reading group	75 75 74	78 79 78	04 69**-53*	22 9 13	.87	% correct answers (RG)
17. % of time spent in silent reading	68 70 66	30 27 33	-03 02 -01	28 14 14	.87 .94 .96	% time spent in silent reading (R)
III. Beliefs About Good Teaching						
18. Some review every day is good	77 74 80	36 37 36	-18 -26 00	28 14 14	.35 .28 1.0	% of time spent reviewing old material (R)
19. A good teacher needs to review only once or twice a semester	37 38 35	36 37 36	-10 -18 -04	27 14 13	.62 .54 .90	% of time spent reviewing old material (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
20. Peer-tutoring is good	71 73 68	21 20 23	-19 -12 -24	28 14 14	.35 .69 .41	Use peer-tutoring (R)
21. It's better to err on the side of under-explaining rather than overexplaining	55 54 57	61 65 57	03 -24 46*	28 14 14	.90 .42	Overly explicit repetitive directions (R)
22. Teachers should set tasks and make decisions	53 50 55	50 48 52	-06 24 -34	27 14 13	.75 .42 .25	Teachers frequently consult class and allow students to share in decision making (R)
23. Teachers must be the authority in knowledge and discipline	65 68 61	50 48 52	-32** -43 -17	28 14 14	.12 .56	Teachers frequently consult class and allow students to share in decision making (R)
24. Belief that authority is an obstacle to teaching	61 67 56	50 48 52	-04 -03 02	28 14 14	.82 .92 .95	Teachers frequently consult class and allow students to share in decision making (R)
25. Strong emphasis on mastery of subject matter and memory of facts	53 50 57	51 54 48	-10 12 -22	28 14 14	.63 .68 .47	Convergent evaluative interactions (Teachers' questions usually having an identifiable correct answer) (R)

Table 1 Continued:

Presage Variables	$\bar{X}$ Reported Frequency	$\bar{X}$ Observed Frequency	r	N	p	Process Variables
26. It's a waste of time to let kids discuss school subjects among themselves	36 38 34	43 44 42	36** 71** -45	27 14 13	.12	Pupil-to-pupil interaction (students converse with each other on class related activities) (R)
27. Active discussion is worthwhile regardless of subject	74 77 71	48 52 44	07 15 -08	28 14 14	.72 .61 .78	% of time spent in focused discussion (R)
		24 23 25	10 22 14	28 14 14	.62 .46 .65	% of time spent in unfocused discussion (R)
		48 40 56	-20 -11 -19	28 14 14	.30 .70 .53	Proportion of teacher-student contacts which are private work related-(AM)
		57 58 56	01 -12 11	27 14 13	.94 .69 .72	Proportion of teacher-student contacts which are private work related-(PM)
		26 23 29	-09 07 -11	26 12 14	.66 .83 .72	Proportion of teacher-student contacts which are private work related-(RG)
28. Individual instruction is a sign of good teaching	65 68 63	33 32 34	31 46* 17	28 14 14	.11 .56	% of time teaching to individuals (R)
		48 40 56	01 06 09	28 14 14	.96 .83 .77	Proportion of teacher-student contacts which are private work related-(AM)
		57 58 56	19 36 01	27 14 13	.35 .21 .97	Proportion of teacher-student contacts which are private work related-(PM)
		26 23 29	-05 31 -24	26 12 14	.80 .33 .42	Proportion of teacher-student contacts which are private work related-(RG)

Table I Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
29. Teachers should look more to the class as a whole rather than to individuals	61 61 60	33 32 34	-07 -21 06	27 14 13	.72 .47 .84	% of time spent teaching to individuals (R)
		48 40 56	01 -10 12	27 14 13	.97 .74 .70	Proportion of teacher-student contacts which are private work related-(AM)
		57 58 56	-41** -18 -61**	26 14 12	.54	Proportion of teacher-student contacts which are private work related-(PM)
		26 23 29	-24 -52 -13	25 12 13	.25 .08 .67	Proportion of teacher-student contacts which are private work related-(RG)
30. Even at the risk of boring some, teachers should explain things thoroughly	69 68 69	77 77 76	16 31 02	28 14 14	.41 .28 .96	Give complete detailed demonstrations and try to prevent errors.
		61 65 56	07 29 -38	28 14 14	.73 .32 .18	Overly explicit, repetitive directions (R)
31. Important to be able to give clear instructional presentations	91 92 90	84 83 85	-17 -01 -41	27 13 14	.41 .99 .14	Clarity (students appear to understand teachers' presentations) (R)
		77 77 76	-09 00 -17	27 13 14	.67 .99 .57	Give complete detailed demonstrations and try to prevent errors (R)
		61 65 56	-13 -21 -13	27 13 14	.52 .50 .65	Overly explicit, repetitive directions (R)
32. One should not do a lot of oral evaluation of students' work	51 51 51	28 28 28	-12 -13 -12	28 14 14	.55 .67 .70	Teacher initiated evaluation (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
33. Non-achievers should be failed	43 46 41	79 79 79	-20 -03 -41	27 14 13	.32 .91 .16	Concerned about academic achievement (R)
34. Teachers should be wrong sometimes and acknowledge their mistakes	65 60 70	76 74 77	02 -25 22	28 14 14	.90 .40 .47	Laugh at own mistakes, or use occasion for teaching or motivating (R)
35. Lesson success is proportional to how free of dramatics it is	42 41 43	41 41 40	07 -02 17	28 14 14	.73 .95 .56	Teacher is melodramatic, expressive or emotive (R)
36. Good attention should be kept by the teachers being interesting instead of their having to ask for it	79 77 81	77 75 80	-41** -57** 09	28 14 14	.77	Level of attention (all students are attentive most of the time) (R)
37. Problem-solving is one of the main purposes of school	68 64 71	36 37 36	01 23 -30	28 14 14	.97 .44 .30	Teacher initiated problem solving (addresses problems and questions to whole class) (R)
		33 30 35	-37** -34 -54**	28 14 14	.24	% of time spent doing problem-solving activities (R)

Table I Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
IV. Classroom Organization and Management						
38. Concern about maintaining classroom control	66 73 59	89 86 92	-25 -41 34	28 14 14	.20 .14 .23	Students seem to believe and respect teacher (R)
		59 57 61	-08 18 -55**	28 14 14	.69 .54	Chaotic, unplanned, poorly scheduled class (R)
		65 66 64	-02 -25 25	28 14 14	.90 .39 .40	Smooth and efficient transitions (R)
		81 79 82	-16 -41 40	28 14 14	.43 .15 .15	Students are compliant and obedient (R)
		64 60 68	-14 -36 32	28 14 14	.48 .21 .26	Well-established routines minimize interruptions (R)
39. Discourage students from moving around the room freely	48 49 49	07 14 00	-15 23 00	28 14 14	.47 .44 1.0	Children must always get permission to leave their seats (R)
		13 9 18	29 08 -02	28 14 14	.13 .79 .94	Children are allowed up as long as no one else is up (one at a time) (R)
40. Have a system of classroom helpers	78 81 76	82 77 88	12 32 09	28 14 14	.54 .27 .77	Teachers have a set monitor or helper system (R)
41. Important to keep attractive bulletin boards	74 77 71	72 71 74	-11 -41 13	27 13 14	.58 .16 .66	Classroom is attractive (R)
		75 73 76	05 36 -24	27 13 14	.81 .22 .41	Classroom is busy and cluttered (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
V. Goals and Values Regarding Student and Teacher Relationships						
42. Enthusiasm is important	92 94 91	58 56 60	-15 28 -52**	27 13 14	.46 .35	Enthusiasm (teachers communicate excitement or enjoyment) (R)
43. Important to be warm toward kids	93 92 94	49 48 50	-15 23 -53**	27 13 14	.46 .46	Positive affect (positively reinforcing teacher behavior or attitudes) (R)
		62 59 65	-03 03 -17	27 13 14	.88 .92 .56	High typical level of affectionateness (R)
		75 72 78	01 05 -14	27 13 14	.97 .87 .64	High range of affectionateness (R)
44. Teachers' judgment of their rapport with students	83 86 81	72 67 76	-07 -20 21	28 14 14	.74 .51 .47	Teachers identify with group and promote a "we" feeling (R)
45. Concerned about whether students are learning what they should	83 83 83	79 79 78	-14 -40 21	28 14 14	.48 .16 .49	Concerned about academic achievement
46. Concerned about how students feel about her	63 60 67	89 86 92	-11 -23 01	28 14 14	.58 .43 .96	Students seem to believe and respect the teacher (R)
		72 67 76	-14 -15 36	28 14 14	.50 .60 .20	Teachers identify with group and promote a "we" feeling (R)

Table I Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
47. Concerned about the wide range of student achievement	74 79 70	79 79 78	-29 -17 -42	28 14 14	.13 .58 .13	Concerned about academic achievement (R)
48. Establish good rapport with students	91 92 90	72 66 76	-03 -46 32	27 13 14	.87 .11 .26	Teachers identify with group and promote "we" feeling (R)
		89 86 92	01 -- 10	27 13 14	.95 -- .73	Students seem to believe and respect teacher (R)
49. Ability to get students' respect	90 92 88	89 86 92	07 -- 31	26 13 13	.73 -- .30	Students seem to believe and respect the teacher (R)
VII. Incentives and Motivation						
50. Believe in publicly praising child as motivation to others	76 70 81	10 11 08	31** 29 46*	28 14 14	 .31	% of praise after all response opportunities-(AM)
		09 09 09	34** 27 44	27 14 13	 .35 .13	% of praise after all response opportunities-(PM)
		09 11 07	28 47 13	26 12 14	.17 .12 .67	% of praise after all response opportunities-(RG)
		07 08 07	-07 21 -33	28 14 14	.72 .47 .25	% behavior contacts which are praised-(AM)
		09 13 05	-02 05 06	27 14 13	.93 .86 .84	% behavior contacts which are praised-(PM)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
50. Believe in publicly praising child as motivation to others Continued:		03 05 02	-16 -35 14	25 12 13	.46 .27 .65	% of relevant student initiated comments praised-(PM)
		05 04 06	-12 -27 -08	25 11 14	.58 .43 .79	% of relevant student initiated comments praised-(RG)
		09 11 07	-16 -32 36	17 9 8	.54 .40 .38	% of opinion questions praised-(PM)
		05 04 06	-16 -42 -00	20 10 10	.50 .23 .99	% of opinion questions praised-(RG)
		84 82 86	-23 -53* 16	28 14 14	.23 .59	% of praise (vs. criticism) for academic work-(AM)
		80 79 81	16 06 28	27 14 13	.44 .84 .37	% of praise (vs. criticism) for academic work-(PM)
		79 83 75	13 01 28	26 12 14	.53 .97 .34	% of praise (vs. criticism) for academic work-(RG)
		03 04 02	-11 06 -10	28 14 14	.57 .83 .73	% of student initiated contacts resulting in praise for work-(AM)
		04 04 05	-12 -16 -14	27 14 13	.55 .59 .65	% of student initiated contacts resulting in praise for work-(PM)
		02 03 01	19 38 22	26 12 14	.34 .23 .45	% of student initiated contacts resulting in praise for work-(RG)
		11 11 12	33** 27 39	27 14 13	.36 .19	% of praise following correct answers-(PM)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
50. Believe in publicly praising child as motivation to others Continued:		10 12 08	00 14 -05	28 14 14	.99 .63 .87	% teacher initiated contacts given praise for work-(AM)
		10 10 10	-06 -19 14	27 14 13	.76 .51 .66	% teacher initiated contacts given praise for work-(PM)
		04 05 04	-04 -37 43	26 12 14	.85 .23 .12	% teacher initiated contacts given praise for work-(RG)
51. Use praise as a motivational technique	89 88 90	10 11 08	21 28 12	28 14 14	.28 .33 .69	% of praise after all response opportunities-(AM)
		09 09 09	10 39 -26	27 14 13	.61 .17 .40	% of praise after all response opportunities-(PM)
		09 11 07	26 31 21	26 12 14	.20 .34 .48	% of praise after all response opportunities-(RG)
		07 08 07	35** 44 28	28 14 14	.12 .34	% behavior contacts which are praised-(AM)
		09 13 05	33** 51* 09	27 14 13	.78	% behavior contacts which are praised-(PM)
		03 05 02	-46** -32 -65**	25 12 13	.31	% relevant student initiated comments praised-(PM)
		05 04 06	39** 23 48*	25 11 14	.51	% relevant student initiated comments praised-(RG)
		09 11 07	-05 -24 47	17 9 8	.83 .54 .25	% of opinion questions praised-(PM)
		05 04 06	-20 -45 -02	20 10 10	.42 .19 .95	% of opinion questions praised-(RG)

Table 1 Continued:

Presage Variables	$\bar{X}$ Reported Frequency	$\bar{X}$ Observed Frequency	r	N	p	Process Variables
51. Use praise as a motivational technique		84	-04	28	.84	% of praise (vs. criticism) for
		82 86	04 -21	14 14	.89 .49	academic work-(AM)
Continued:		80	15	27	.45	% of praise (vs. criticism) for
		79 81	24 02	14 13	.41 .96	academic work-(PM)
		79	03	26	.87	% of praise (vs. criticism) for
		83 75	05 -00	12 14	.87 .99	academic work-(RG)
		03	-24	28	.22	% of student initiated contacts
		04 02	-20 -29	14 14	.49 .31	resulting in praise for work-(AM)
		04	06	27	.75	% of student initiated contacts
		04 05	33 -23	14 13	.25 .46	resulting in praise for work-(PM)
		02	08	26	.69	% of student initiated contacts
		03 01	-08 11	12 14	.80 .79	resulting in praise for work-(RG)
		11	13	27	.52	% of praise following correct
		11 12	41 -15	14 13	.14 .64	answers
		10	03	28	.86	% of teacher initiated contacts
		12 08	-13 31	14 14	.66 .27	given praise for work-(AM)
		10	-26	27	.19	% of teacher initiated contacts
		10 10	-29 -21	14 13	.32 .49	given praise for work-(PM)
		04	-16	26	43	% of teacher initiated contacts
		05 04	-82** 30	12 14	.29	given praise for work-(RG)
52. Frequent praise is important	90	10	11	27	.59	% of praise after all response op-
	92 88	11 08	21 -08	13 14	.50 .79	portunities-(AM)
		09	11	26	.60	% of praise after all response op-
		09 09	33 -13	13 13	.27 .67	portunities-(PM)
		09	17	25	.41	% of praise after all response op-
		11 07	17 09	11 14	.61 .75	portunities-(RG)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
52. Frequent praise is important		07	29	27	.15	% of behavior contacts which are
		08 07	15 39	13 14	.64 .16	praised-(AM)
Continued:		09	36**	26		% of behavior contacts which are
		13 05	42 21	13 13	.15 .50	praised-(PM)
		03	-40**	24		% of relevant student initiated
		05 02	-60** -33	11 13	.28	comments praised-(PM)
		05	41**	24		% of relevant student initiated
		04 06	39 48*	10 14	.27	comments praised-(RG)
		09	02	16	.94	% opinion questions praised-(PM)
		11 07	-42 72**	8 8	.31	
		05	-41**	20		% opinion questions praised-(RG)
		04 06	-48 -33	10 10	.16 .36	
		84	-08	27	.71	% of praise (vs. criticism) for
		82 86	-12 04	13 14	.71 .88	academic work-(AM)
		80	14	26	.49	% of praise (vs. criticism) for
		79 81	32 -04	13 13	.29 .90	academic work-(PM)
		79	06	25	.78	% of praise (vs. criticism) for
		83 75	-37 17	11 14	.26 .57	academic work-(RG)
		03	18	27	.36	% of student initiated contacts
		04 02	47 -31	13 14	.11 .29	resulting in praise for work-(AM)
		04	-00	26	.99	% of student initiated contacts
		04 05	23 -17	13 13	.46 .58	resulting in praise for work-(PM)
		02	13	25	.55	% of student initiated contacts
		03 01	01 11	11 14	.98 .71	resulting in praise for work-(RG)

Table 1 Continued:

Presage Variables	$\bar{X}$ Reported Frequency	$\bar{X}$ Observed Frequency	r	N	p	Process Variables
52. Frequent praise is important Continued:		11 11 12	10 34 -09	26 13 13	.63 .26 .78	% of praise following correct answers
		10 12 08	15 02 22	27 13 14	.45 .94 .45	% of teacher initiated contacts given praise for work-(AM)
		10 10 10	-03 19 -31	26 13 13	.87 .54 .31	% of teacher initiated contacts given praise for work-(PM)
		04 05 04	21 -23 48*	25 11 14	.33 .51	% of teacher initiated contacts given praise for work-(RG)
53. Praise in some way all students' work	69 68 70	10 11 08	-13 -22 28	28 14 14	.51 .24 .34	% of praise after all response opportunities-(AM)
		09 09 09	-04 -15 14	27 14 13	.82 .61 .65	% of praise after all response opportunities-(PM)
		09 11 07	-20 -28 02	26 12 14	.32 .38 .95	% of praise after all response opportunities-(RG)
		03 05 02	-23 -39 01	25 12 13	.26 .21 .98	% of relevant student initiated comments praised-(PM)
		05 04 06	41** 55* 37	25 11 14	.20	% of relevant student initiated comments praised-(RG)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
53. Praise in some way all students' work Continued:		09 11 07	49** -67**23	17 9 8	.58	% of opinion questions praised-(PM)
		05 04 06	-27 -75**27	20 10 10	.26 .46	% of opinion questions praised-(RG)
		84 82 86	-07 -14 06	28 14 14	.71 .64 .84	% of praise (vs. criticism) for academic work-(AM)
		80 79 81	14 -10 59**	27 14 13	.48 .74	% of praise (vs. criticism) for academic work-(PM)
		79 83 75	07 -38 36	26 12 14	.75 .22 .21	% of praise (vs. criticism) for academic work-(RG)
		03 04 02	14 21 13	28 14 14	.47 .28 .67	% of student initiated contacts resulting in praise for work-(AM)
		04 04 05	37** 41 34	27 14 13	.14 .26	% of student initiated contacts resulting in praise for work-(PM)
		02 03 01	-18 -22 -10	26 12 14	.39 .50 .74	% of student initiated contacts resulting in praise for work-(RG)
		11 11 12	-04 -14 10	27 14 13	.86 .63 .76	% of praise following correct answers
		10 12 08	-32** -58**13	28 14 14	.67	% of teacher initiated contacts given praise for work-(AM)
		10 10 10	15 05 34	27 14 13	.47 .85 .26	% of teacher initiated contacts given praise for work-(PM)
		04 05 04	-07 -16 09	26 12 14	.74 .62 .75	% of teacher initiated contacts given praise for work-(RG)
		51 49 52	32** 36 29	28 14 14	.21 .32	Positively reinforcing teachers' behavior or attitudes (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
54. Praising the work of others does little to stimulate achievement	48 47 49	10 11 08	06 22 -14	27 14 13	.78 .45 .65	% of praise after all response opportunities-(AM)
		09 09 09	01 11 -09	27 14 13	.97 .72 .77	% of praise after all response opportunities-(PM)
		09 11 07	-05 09 -28	25 12 13	.80 .78 .35	% of praise after all response opportunities-(RG)
		03 05 02	01 -09 13	25 12 13	.97 .79 .67	% of relevant student initiated comments praised-(PM)
		05 04 06	-40** -04-60**	24 11 13	.91	% of relevant student initiated comments praised-(RG)
		09 11 07	-16 -16 -10	17 9 8	.54 .68 .81	% of opinion questions praised-(PM)
		05 04 06	08 -13 27	20 10 10	.76 .72 .46	% of opinion questions praised-(RG)
		84 82 86	-45** -45 -54*	27 14 13	.11	% of praise (vs. criticism) for academic work-(AM)
		80 79 81	-37** -14-64**	27 14 13	.64	% of praise (vs. criticism) for academic work-(PM)
		79 83 75	-44** -28 36	26 12 14	.39 .21	% of praise (vs. criticism) for academic work-(RG)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
54. Praising the work of others does little to stimulate achievement Continued:		03 04 02	-00 -16 24	27 14 13	.98 .60 .44	% of student initiated contacts resulting in praise for work-(AM)
		04 04 04 05	-26 -26 -27	27 14 13	.19 .38 .37	% of student initiated contacts resulting in praise for work-(PM)
		02 03 01	02 36 -24	25 12 13	.91 .25 .44	% of student initiated contacts resulting in praise for work-(RG)
		11 11 11 12	-02 09 -11	27 14 13	.90 .77 .72	% of praise following correct answers
		10 12 08	-07 08 -21	27 14 13	.74 .78 .49	% of teacher initiated contacts given praise for work-(AM)
		10 10 10 10	-02 10 -15	27 14 13	.90 .74 .63	% of teacher initiated contacts given praise for work-(PM)
		04 05 04	-11 -03 -18	25 12 13	.62 .92 .57	% of teacher initiated contacts given praise for work-(RG)
55. Use competition to motivate	56 54 58	21 20 22	40** -13 -26	27 13 14	.68 .37	Use peer pressure as punishment (R)
		59 56 62	-48** -77** -30	27 13 14	.31	Students wait and listen respectfully when classmates are called on (R)
56. Use smiling faces, gold stars as concrete rewards	62 58 66	21 11 30	11 14 04	27 13 14	.58 .65 .88	Use symbols such as gold stars or smiling faces as rewards (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables
57. Use individual prizes as rewards	54 45 61	21 11 30	38** 05 28	26 12 14	.88 .33	Use symbols (gold stars, smiling faces, etc.) as rewards (R)
		12 09 14	12 64** 26	26 12 14	.57 .38	Use concrete objects (candy, money, prizes) as rewards (R)
58. Public recognition as a reward	67 57 77	9 05 13	34** 07 33	28 14 14	.82 .25	Use waiver of requirements (shorter or fewer assignments) as rewards (R)
		22 25 20	38** 34 29	28 14 14	.24 .31	Use jobs (monitor, helper, clean the erasers) as rewards (R)
		48 46 50	-14 41 37	28 14 14	.50 .14 .19	Use public recognition as a reward (R)
59. Use exemption from tests	44 33 53	31 23 39	41** 11 -38	27 13 14	.73 .18	Use special privileges (use of special equipment, go to library) as rewards (R)
		9 05 13	-03 21 41	27 13 14	.87 .51 .14	Use waiver of requirements (shorter or fewer assignments) as rewards (R)
60. Use special privileges as reward	69 64 74	31 23 39	19 32 02	28 14 14	.35 .26 .95	Use special privileges (use of special equipment, go to library) as rewards (R)

Table 1 Continued:

Presage Variables	$\bar{X}$% Reported Frequency	$\bar{X}$% Observed Frequency	r	N	p	Process Variables

[1] The top centered correlation coefficient reflects the degree of teacher accuracy in reported vs. observed behavior or attitudes for the whole sample of teachers.

The correlation coefficient to the right reflects the degree of teacher accuracy in reported vs. observed behavior for high effective teachers. The correlation coefficient to the left reflects the same relationships for low effective teachers.

[2] * $p \leq .10$

** $p \leq .05$ The probabilities are listed for all correlations which are not significant.

[3] (R) means coder ratings